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**PROJECT PERFORMANCE ASSESSMENT REPORT**

**REPUBLIC OF UZBEKISTAN**

**TASHKENT SOLID WASTE MANAGEMENT PROJECT  
(LOAN 4326)**

**June 9, 2008**

*Sector Evaluation Division  
Independent Evaluation Group (World Bank)*

## Currency Equivalents (annual averages)

*Currency Unit = Soum*

1997	US\$1.00	66.4 Soum	2003	US\$1.00	971.3 Soum
1998	US\$1.00	94.5 Soum	2004	US\$1.00	1,119.2 Soum
1999	US\$1.00	124.6 Soum	2005	US\$1.00	1,112.9 Soum
2000	US\$1.00	236.3 Soum	2006	US\$1.00	1,218.9 Soum
2001	US\$1.00	422.6 Soum	2007	US\$1.00	*1,266.3 Soum
2002	US\$1.00	771.5 Soum			* mid-year

## Abbreviations and Acronyms

CAS	Country Assistance Strategy
CIS	Commonwealth of Independent States (of the former Soviet Union)
EBRD	European Bank for Reconstruction and Development
ERL	Emergency Recovery Loan
ERR	Economic Rate of Return
FRR	Financial Rate of Return
GOU	Government of Uzbekistan
ICB	International Competitive Bidding
ICR	Implementation Completion Report
IDA	International Development Association
IEG	Independent Evaluation Group
IEGWB	Independent Evaluation Group (World Bank)
IFRS	International Financial Reporting Standards
LA	Loan Agreement
M&E	Monitoring and Evaluation
MAKHSUSTRANS	(name in Uzbek language of) Tashkent Municipal Solid Waste Management Company
MOF	Ministry of Finance
O&M	Operation and Maintenance
PA	Project Agreement
PAD	Project Appraisal Document
PIU	Project Implementation Unit
PPAR	Project Performance Assessment Report
SCRUDSCE	State Committee of the Republic of Uzbekistan on Demonopolization, Support of Competition and Entrepreneurship
SPETSTRANS	(name in Russian language of) Tashkent Municipal Solid Waste Management Company
SWM	Solid Waste Management
TA	Technical Assistance
TTACS	Tashkent Territorial Association for Communal Services
WB	World Bank (IBRD)

## Fiscal Year

Government: January 1 – December 31

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**IEGWB Mission: Enhancing development effectiveness through excellence and independence in evaluation.**

### **About this Report**

The Independent Evaluation Group assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEGWB annually assesses about 25 percent of the Bank's lending operations through field work. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons.

To prepare a Project Performance Assessment Report (PPAR), IEGWB staff examine project files and other documents, interview operational staff, visit the borrowing country to discuss the operation with the government, and other in-country stakeholders, and interview Bank staff and other donor agency staff both at headquarters and in local offices as appropriate.

Each PPAR is subject to internal IEGWB peer review, Panel review, and management approval. Once cleared internally, the PPAR is commented on by the responsible Bank department. IEGWB incorporates the comments as relevant. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

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**Outcome:** The extent to which the operation's major objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). Relevance of design is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. The efficiency dimension generally is not applied to adjustment operations. *Possible ratings for Outcome:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

**Risk to Development Outcome:** The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings for Risk to Development Outcome:* High Significant, Moderate, Negligible to Low, Not Evaluable.

**Bank Performance:** The extent to which services provided by the Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan/credit closing, toward the achievement of development outcomes. The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings for Bank Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

**Borrower Performance:** The extent to which the borrower (including the government and implementing agency or agencies) ensured quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development outcomes. The rating has two dimensions: government performance and implementing agency(ies) performance. *Possible ratings for Borrower Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.



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<p>This report was prepared by Roy Gilbert who assessed the project in September 2007. Romyne Pereira provided administrative support.</p>
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## Principal Ratings

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Satisfactory	Satisfactory	Moderately Satisfactory
Risk to Development Outcome	Moderate	Moderate	Significant
Bank Performance	Satisfactory	Satisfactory	Moderately Unsatisfactory
Borrower Performance	Satisfactory	Satisfactory	Moderately Satisfactory

\* The Implementation Completion Report (ICR) is a self-evaluation by the responsible Bank department. The ICR Review is an intermediate IEGWB product that seeks to independently verify the findings of the ICR.

## Key Staff Responsible

<i>Project</i>	<i>Task Manager/ Leader</i>	<i>Division Chief/ Sector Director</i>	<i>Country Director</i>
Appraisal	Roger Batstone	Michele de Nevers	Ishrat Husain
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## Preface

This is a Project Performance Assessment Report (PPAR) for the **Uzbekistan; Tashkent Solid Waste Management Project (Ln.4326)**, for which the World Bank approved a loan in an amount of US\$24 million on May 21, 1998. The loan was closed on June 30, 2006 two-and-a-half years later than planned, when US\$2.6 million was cancelled.

The report is based on a review of project documents, including the Implementation Completion Report, the Program Document, the Memorandum to the President, legal documents and project files, as well as discussions held with World Bank staff and consultants involved in the project, as well as EBRD staff and consultants. An IEG mission visited Uzbekistan in September 2007 to review project results and met with officials of the Finance Department and the Department of Investments of Tashkent Municipality, the Tashkent Territorial Association of Communal Utilities, the Makhsustrans solid waste operator in Tashkent (its HQ, transfer station, repair depot, Yunosabad District, and the Ahangaran Road disposal site), and the private Fayzli-Trans waste collection service. The IEG also met with many project beneficiaries on field visits throughout the city, as well as operators of secure collection areas, and Makhsustrans' field staff. The mission also visited EBRD in London and Tashkent. IEG gratefully acknowledges the courtesies and attention freely given by these interlocutors in Tashkent and London.

IEG selected this project for a PPAR field assessment, for the reasons recommended at the ICR Review stage, namely: (i) As an input to IEG's special study of municipal management; (ii) to review the use of social assessments in decision making and project management; and (iii) to derive lessons for corporatization and reform of solid waste management.

Following standard IEG procedures, copies of the draft PPAR were sent to government officials and agencies for their review and comments but no comments were received.



## Summary

With 2.6 million inhabitants, Tashkent is Central Asia's largest metropolis and regional hub. Uzbekistan's post-Soviet transition severely disrupted municipal services such as Tashkent's solid waste management (SWM) that had depended upon subsidies and Soviet supply chains that were cut in 1991. The World Bank (WB) identified a recovery operation, in 1997, the Tashkent Solid Waste Management Project one of its first investment operations in the country.

The first project *recovery* objective of restoring Tashkent's SWM is substantially relevant today. A major city like Tashkent cannot do without a SWM system. Any failure of it would have to be overcome immediately. For similar reasons, the second project *sustainability* objective of improving the technical, financial and institutional basis or future operations remains highly relevant.

But poorly conceived parallel project financing by the WB and the European Bank for Reconstruction and Development (EBRD) led to a flawed project design. Beyond system *recovery* and *operational sustainability* that both banks supported, EBRD, differently from the WB, had the distinct objective of the immediate privatization of the solid waste operation. For its part, the WB focused upon longer term sustainability of the operation, whether in the public or the private sector. Achieving this WB institutional goal of *sustainability* had to rely upon EBRD financed components—none funded by the WB. The WB financed only physical investments and not all of these. There was also a major difference of approach at the outset between the two banks. EBRD reckoned a two-year project engagement was enough while the WB planned a five-year implementation.

Project start up was slow. Loan effectiveness was one year behind schedule and the first large disbursement two years after that. By the original completion date, just 50 percent of the loan had been disbursed. A combination of Uzbekistan's first large international competitive bidding (ICB) for solid waste equipment and vehicles (resulting in cost savings), GOU's lack of compliance with EBRD's privatization covenants, and Tashkent Municipality's shortfall of counterpart funding slowed project implementation. Between 2001 and 2003 the pace accelerated, slowing again after EBRD 2003 Annual Meetings held in Tashkent. Tashkent municipality's solid waste operator called here by its Uzbek name *Makhsustrans*—but often referred to as *Spetstrans* in English language reports in the WB—took on increased responsibilities for SWM during implementation, including the direct collection of user charges, or tariffs, with a deteriorating collection performance to begin with, however. Both financial management and performance of the loss-making Makhsustrans remained weak. On the other hand, project implementation was an opportunity to give attention to community participation in SWM—the first time in Tashkent.

Project monitoring and evaluation (M&E) was weak, since most of the 35 “key performance indicators” were not measurable according to the ICR. The few that were, were focused upon the delivery of project components rather than the achievement of project objectives. Beneficiary surveys found users more satisfied with Tashkent's SWM *after* the project than before, but this by itself does not indicate that the project achieved its objectives. Final users' experience of SWM is limited only to the collection service they receive. Their answers to survey questions about the quality of the waste disposal

service which they do not experience or know cannot be meaningful. Nor could they give informed opinions about the technical and financial performance of the SWM system.

In *restoring* Tashkent's solid waste operation, the first project objective, efficacy was *substantial*. Tashkent's SWM recovered through renewal of the vehicle fleet, the introduction of well functioning secure collection points and large scale transfer stations, all equipped by the project. The project had designs on all three of Tashkent's disposal sites. The Ahangaran Road site was upgraded into a controlled landfill, but not a full sanitary landfill where leachate and methane gas would be collected and treated. The old environmentally hazardous Zangiata dumpsite—given just two more years of useful life by the PAD in 1998— was to be closed, but is still in use today. This is because Tashkent Municipality, charged by the project with closing Zangiata, could not do so because the site is outside its jurisdiction. After the appraisal's error of its location was discovered, an August 2004 legal amendment cancelled the covenant requiring its closure. The third more centrally located Hasanbay dumpsite is closed and covered as agreed.

Efficacy in achieving the second *sustainability* project objective of improving the basis for continuing operations into the future has been *modest*. Funding and financial management needs were improving until 2003, after which the residential tariff responsible for most of Makhsustrans' revenue was frozen. During the PPAR mission, IEG discussed with local authorities in Tashkent the risk that a lack of cost recovery posed to the continuing SWM operation and to the achievement of this objective. In February 2008, four months after the IEG mission, the regulatory authority increased the tariff by 40 percent, bringing respite to Makhsustrans' acute financial stress.

Three broader issues arise from this evaluation. First, sustaining everyday funding is a must for an operation in any sector. Second, to attract and retain private sector participation an operation must be profitable. Third, ex-post evaluation of operations with parallel financing may be most easily done separately from the perspective of each donor, while a joint evaluation could perhaps have helped all parties better understand the challenges each one faced in such circumstances.

The overall outcome of the project is rated *moderately satisfactory*. An *unsatisfactory* outcome rating would have been warranted without the recent adjustment of the solid waste tariff in Tashkent that went a long way toward achieving the *sustainability* objective. Efficacy of the first *recovery* objective was *substantial*, but there were moderate shortcomings, notably environmental risks, on the disposal side of the operation. Efficacy of the second *sustainability* objective (with the new tariff) was *modest*, since improvements to the technical base of future operations were weighed down by little progress until very recently on the institutional and financial sides. Efficiency is rated *modest*, with substantial economic returns, but negligible financial ones. The Risk to Development Outcome is rated *significant*, given the uneven financial support given to the project in the past. (World) Bank Performance is rated *moderately unsatisfactory*, given a flawed project design that did not fully align the perspectives of the two parallel financiers, and the WB's inadequate appraisal and supervision of the important financial, environmental and jurisdictional aspects of the project. Borrower performance is rated *moderately satisfactory* for the effective technical implementation of the project, but with sufficient attention to its financial and institutional needs only at the beginning and very end of the project.

The experience of this project reinforces the following IEG lessons:

- Parallel funded operations in which all donors do not share a key objective (privatization in this case) should generally be avoided and preference given to a single donor approach. If operations with divergent aims cannot be avoided, then the project design should ensure each donor has control over the components that are instrumental to the achievement of its own particular objectives.
- Careful assessments of users' willingness and ability to pay, borrower agencies' institutional and financial performance, the financial impact of a project upon users and providers should always be part of the appraisal of projects that incur significant operating costs over the medium to long term.
- Cost recovery and project financial performance should be monitored thoroughly during supervision. The WB should bring problems—such as financial shortfalls—that imperil project achievements immediately to the attention of a borrower, continually offering high quality hands-on technical advice on solutions as needed. If current revenues are insufficient and repeated requests for strengthening them ignored, then the WB should seek remedies under the legal agreements that might include the suspension of disbursements and/or cancellation of a project.

Vinod Thomas  
Director-General  
Evaluation



## 1. Background and Context

1.1 With a current population of 2.6 million, the Uzbek capital Tashkent is Central Asia's largest metropolis, having been the Soviet Union's urban hub for that region. The city's impressive boulevards, squares and monumental public buildings and spaces, rebuilt after the massive 1966 earthquake, facilitate a transport-intensive municipal service such as the solid waste management (SWM) system of collection and disposal reviewed here. But the visual opulence of central Tashkent belies Uzbekistan's US\$680 GDP per capita—the third lowest in the Commonwealth of Independent States (CIS). The country became IDA eligible in 2002.

1.2 While the post-Soviet transition had a milder macro-economic impact in Uzbekistan than in other CIS countries, it severely disrupted Tashkent's SWM. Before 1991, both capital and current expenditures were heavily subsidized and equipment procured through discount supply chains from within the Soviet Union. After 1991, these benefits ceased and, with rising inflation, SWM in Tashkent headed for a crisis. Garbage collections were curtailed, trash piled up in city streets, and flies and rodents proliferated. Ad hoc on-street incineration also took its toll on the quality of the city's air. In other words, with a SWM failure, Tashkent faced a potential public health and environmental emergency.

1.3 By 1997, Uzbekistan's economy began to improve and the country's international relations broadened and deepened. The World Bank (WB) identified the Tashkent Solid Waste Management Project reviewed here. Although not formally designated as an emergency recovery loan (ERL), this first WB financed investment project in the country, was a *de facto* recovery operation to confront what the project appraisal document described as Tashkent SWM's "approaching state of collapse" (PAD p. 22).

## 2. Objectives and Design

2.1 The project was financed in parallel by the World Bank (WB) and the European Bank for Reconstruction and Development (EBRD). The WB lent US\$24.0 million to the Government of Uzbekistan (GOU) for 20 years with five years' grace, with GOU on-lending the proceeds to the Municipality (called the "Hokimiyat" in Uzbekistan) of Tashkent for 12 years with three years' grace. The EBRD loan of US\$19.2 million went directly to the Municipality for a 10 year term with three years' grace. EBRD also channeled an additional US\$2.1 million of bilateral donor grant funding, particularly from Japan and the Netherlands for technical assistance (TA) under the project's institutional support component.

2.2 Both banks (the WB and EBRD) were committed to help Tashkent's SWM system to recover, but there was an important difference in the objectives of how to sustain and nurture it (Box 1). EBRD wanted to pursue this through the privatization of

<b>Box 1: Tashkent Solid Waste Management Project – Design Summary</b>	
<b>Objectives</b>	<b>Components</b>
<p><b>WORLD BANK (US\$24m.)*</b></p> <p>(a) to restore Tashkent's municipal solid waste management collection and disposal system to a satisfactory level of service. ("recovery" objective)</p> <p>(b) to improve the technical, financial, and institutional basis for its future operation and development. ("sustainability" objective)</p>	<p><b>A (i). Investment: (appraisal cost US\$31.0m.; actual cost US\$27.4m.)</b></p> <ul style="list-style-type: none"> <li>- Collection infrastructure (appraisal cost US\$13.1m.; actual cost US\$7.1m.), mainly collection bins.</li> <li>- Transfer stations (appraisal cost US\$5.1m.; actual cost approx.US\$5.3m.)</li> <li>- Collection vehicles and support equipment (appraisal cost US\$12.8m.; actual cost US\$15.7), as well as compactors and service vehicles.</li> </ul>
<p><b>EBRD (US\$19.2m.)*</b></p> <p>(c) to promote the corporatization and improvement of the financial performance of Makhsustrans.</p> <p>(d) to encourage private sector participation in the provision of solid waste services.</p> <p>(e) to restructure the Tashkent Municipal Service Board.</p> <p>(f) to rehabilitate and update the municipal solid waste collection and disposal system.</p>	<p><b>A (ii). Investment: (appraisal cost US\$13.1m.; actual cost US\$7.0m.)</b></p> <ul style="list-style-type: none"> <li>- Transfer vehicles (appraisal cost US\$4.7m.; actual cost approx.US\$5.3m.)</li> <li>- Vehicle fleet development (appraisal cost US\$2.7m.; actual cost US\$1.7m.), upgrading district service centers and central repair workshop.</li> <li>- Landfill modernization (appraisal cost US\$3.8m.; actual cost US\$3.7m.), bulldozers, landfill compactors, excavators, construction of site service buildings and upgrading of access road.</li> <li>- Landfill closure (appraisal cost US\$1.1m.; actual cost US\$1.3m.), necessary equipment and civil works.</li> <li>- Biomedical waste facilities (appraisal cost US\$0.8m.; actual cost US\$0.3m.), provision of dedicated vehicles, containers and a segregated disposal cell at the main landfill.</li> </ul> <p><b>B. Institutional Support: (appr. cost US\$4.1m; actual cost US\$3.3m.)</b></p> <ul style="list-style-type: none"> <li>- Project management support (appraisal cost US\$0.3m.; actual cost US\$0.6m.), for project implementation units (PIU).</li> <li>- Institutional strengthening (appraisal cost US\$3.8m.; actual cost US\$2.7m.), TA and training for strategic SWM plan, financial management, a tariff study, landfill operation/closure designs, and public participation/education programs.</li> </ul>
<p><b>Sources:</b> World Bank PAD and ICR. EBRD Project Document. Notes: * loan commitments, not including US\$10.1m. Tashkent municipality counterpart; Total project costs were estimated by the World Bank at appraisal as US\$56.0m. and actual US\$43.2m. and by EBRD at appraisal as US\$41.1m. and actual US\$35.5m.</p> <p><b>Note:</b> This PPAR does refer to EBRD financed project components, but does not assess project achievements of the EBRD objectives—something already done by EBRD's own evaluation (details Table 4)</p>	

Makhsustrans<sup>1</sup>, the municipal SWM operator, while the WB wanted to lay the foundation for the SWM operation to continue into the future, whether in the public or private sector. How each bank saw its involvement in the project was different too. The WB estimated five years for implementation, while EBRD just two. Each bank had to rely in part on the other's funding to finance components that would help it achieve its own objectives. Crucially, for institutional and financial improvements, the WB depended upon the institutional support component funded and supervised by EBRD (Box 1). At completion, both banks and GOU recognized that the design of what should have been an integrated operation was weakened by this bifurcation of intent (ICR p. 17; p. 45 and EBRD ICR p.

<sup>1</sup> The Uzbek name is used in this report as it is in Tashkent and in Russian language project documentation. It is the same agency that is called "Spetstrans" in English language WB reports.



99). In the words of the Bank ICR: “preparation was made more complicated due to the decision to enter into a parallel financing with EBRD (...) that conditioned disbursement of 80 percent of its loan on the hokimiyat’s (Tashkent Municipality) meeting triggers that proved difficult to meet. The Bank (WB) should have considered an alternative project design that would have made it less dependent on the EBRD’s funding decisions” (p. 17). In later comments, the Region agrees that this arrangement was “not optimal”, but points out that this was the only one that EBRD would accept at the time, because of EBRD’s need to retain control over its own funds. Of course, the EBRD offered GOU the advantage of grant funding of technical assistance (TA) that would have been loan funded if financed by the WB. IEG is not against the partnership with EBRD itself, but endorses the ICR’s concerns about the problems that arose from the way it was conceived. It resulted in a flawed design that stymied reform through the separation of the institutional support components from most of the investment components.

2.3 WB project objectives (Box 1)—those covered by this PPAR—remain substantially relevant to Borrower and WB priorities, such as the calls for greater efficiency in public service delivery in the 2002 Country Assistance Strategy (CAS p. 34). Also as Uzbekistan’s capital city and main economic center, Tashkent cannot afford to be without a working SWM system—so *recovery* has always to be paramount in case the SWM should face any stress. *Sustaining* Tashkent’s SWM operation must hence be a highly relevant objective for all levels government and, not least of all, for final users. Project appraisal emphasized the first *recovery* objective more than the second *sustainability* objective, where the PAD noted that: “The primary object of the project is to prevent the system’s collapse and to restore it to the basic level of service that it was designed to provide” (PAD p. 5). Today, now that it has recovered, *sustaining* the SWM is the higher priority.

2.4 The relevance of the project design—covering components funded by both banks—to achieving WB project objectives was *modest*. The components themselves were the right instruments, but the untidy WB/EBRD financing arrangements divorced valid sub-components from their respective objective and from the bank that was trying to help achieve it. The *technical (investment)* side of the project made good use of existing facilities and assets, from the Makhsustrans operator itself to all three of the city’s disposal sites (one for upgrading and two for closure and rehabilitation). One of the two slated for closure at Zangiata to the south of Tashkent, should not have been included in the project since it was located outside the jurisdiction of the Municipality of Tashkent, charged by the project to close it. After this mistake became clear, an amendment to the legal documents cancelled the covenant requiring its closure. On the other hand, legitimate technical alternatives of disposal, such as waste composting and incineration were considered but rejected on environmental grounds. The main technical innovation was through opening 395 *secure* collection points—fenced off and staffed 24 hours—in residential areas, in-town transfer stations and social assessments to help gauge users’ willingness to pay for and satisfaction with the services provided. The project also introduced Uzbekistan to international competitive bidding (ICB) for procuring Tashkent’s fleet of SWM vehicles and equipment. The *institutional support* side of the project—for the most part under the responsibility of EBRD—included project implementation units (PIU), important strategic SWM planning and design work for landfill operations. The PAD noted that the SWM’s “present cost data is inadequate” so

that it had to propose a tariff study for the future, instead of reviewing the adequacy and affordability of the then current system of tariffs and charges during appraisal (PAD p.32). For the same reasons, the design had to leave out an analysis of Makhsustrans' own financing and financial management needs, and the financial impact of the project upon the Municipality.

### **3. Implementation and Costs**

3.1 Start up was slow. Cross conditionality in the complex parallel funding design, as the ICR had noted, was the main reason. As a result, the WB Loan became effective in May 1999; nearly one year behind schedule, and the first large—US\$250,000-plus—disbursement was more than two years later in June 2001. By the original closing date of December 31, 2003, only half the Loan had been disbursed. In later comments on this PPAR, the Region reckoned that the shortfall had come from savings yielded by the low prices of international competitive bidding (ICB) of the equipment. The project closed two-and-a-half years late on June 30, 2006 when 11 percent remaining of the Loan was cancelled. Uzbekistan's first ever ICB for the fleet of 270 vehicles and related collection equipment (particularly bins), eventually supplied from Korea, proved time consuming. Delays in GOU compliance with EBRD transition covenants held up EBRD financing of transfer vehicles. Overcoming these challenges and delays, the project did succeed in delivering the vehicles and equipment planned. During field trips throughout the city, the IEG mission visited—sometimes in the company of local officials, sometimes not—a transfer station, the landfills, the repair depot and several secure collection points. All project equipment inspected appeared to be in good working order. Well maintained collection trucks with the prominent “Makhsustrans” logo plying Tashkent's boulevards and streets were a common sight.

3.2 WB missions were fielded frequently from Washington with regular backup from a WB consultant based in the WB's Tashkent field office. A mid-term review in September 2001 launched beneficiary assessments and proposed cost saving measures for Makhsustrans, but did not produce fundamental changes in project design (ICR p. 19). Surprisingly, given the start-up delays and the uneven financial progress of the project, supervision missions always rated development outcomes and implementation progress as satisfactory. According to later comments by the Region, “the ratings reflect the WB team's view that most of the ingredients for a sustainable system were in place, or almost there, and the project would meet the DOs (development objectives).” Sometimes EBRD joined WB missions, but EBRD also followed up project implementation through its local office in Tashkent, referring major decisions, on counterpart funding, loan agreement compliance and extensions, for instance, to its headquarters in London. Little progress with privatization, inadequate municipal counterpart funds and protracted processing of extensions stretched EBRD's participation in the project from two to seven years. But less than half its loan was disbursed. Progress was particularly slow after the 2003 Annual Meetings of EBRD were held in Tashkent, where a number of delegates openly criticized Uzbekistan's political system and regime.

3.3 Project implementation introduced Uzbekistan to the large scale procurement of vehicles and other solid waste equipment for the first time. As to be expected, this was a very time consuming process, but it resulted in cost savings that allowed additional equipment to be procured. Implementation also introduced financial audits that in 2003 and 2004 gave qualified opinions on Makhsustrans' accounts. The auditors found that the accounts did not truly reflect the operator's financial position, especially through understating its revenues. More complete reporting subsequent to 2005 brought the accounts back in order. Social assessments and community participation also featured strongly during implementation. They were to learn about residents' opinions about the location of the transfer stations, for instance, and user satisfaction more generally. The project paid a lot of attention to the interests of waste pickers, although they were far fewer in Tashkent than commonly found in developing country cities.

## 4. Monitoring and Evaluation

4.1 IEG endorses the ICR's view that project monitoring and evaluation (M&E) was more geared toward tracking project implementation progress than to the achievement of outcomes (ICR p. 17) and that too many indicators were not monitorable (ICR p.7). The design described, for instance, two "key performance indicators" (of the 35 listed) as being Makhsustrans' "financial independence" and "long-term development options" without explaining how they would be measured and what criteria of success would be used (PAD pp. 13-20). M&E was strongest in handling operational baseline, target and achievement data, such as the tonnage of waste collected, taken to transfer stations, or directly to the landfill. Financial data in the M&E system was weak as financial indicators were measured in current prices. This was adequate for reporting financial ratios, but did not provide useful time series over a period in which inflation accumulated 870 percent. Another M&E weakness was its treatment of user satisfaction survey results as evidence of the achievement of project objectives. The latter had a lot to do with the *disposal* side of the SWM system, the technical efficiency of the operation and its finances; topics upon which final users cannot be expected to give informed opinions. Typically, residents of any large urban area like Tashkent will have no direct experience of solid waste disposal systems to which their own waste may eventually be transported. Their answers to survey questions about the quality of the waste disposal service which they do not experience or know cannot be meaningful. Nor could they give informed opinions about the technical and financial performance of the SWM system. Thus IEG considers that survey respondents' answers to questions of this type cannot be used as measures of project success or failure. Also, media reports of the cleanliness of Tashkent city do not provide convincing evidence of project success, since they depend mostly upon the city's effective street cleaning service that was not the object of this project. Later Region comments point out that Makhsustrans has responsibilities for street cleaning activities too, but IEG notes that they were not the object of the project presently under review.

## 5. Project Outcomes by Objective

### RESTORING THE SOLID WASTE OPERATION

5.1 **Substantial Efficacy:** The project was instrumental in helping to restore Tashkent’s SWM system to a satisfactory level of service as intended, more through the provision of essential vehicles and equipment—via the project’s investment component that accounted for 91 percent of total costs—than through institutional change. Although the waste collection volume reported today is below the baseline and the project’s own target (Table 1), this probably does not represent a real shortfall. It rather reflects the poor quality of baseline (and hence planning) data that was not empirical, but instead based upon unrealistically high Soviet era standards of expected waste per capita. Project figures, by contrast, are now amounts *actually weighed*—something made possible by transfer station and landfill equipment provided by the project itself. Still, the baseline data does serve to remind us that there was a SWM system in Tashkent prior to the project, albeit in state of imminent collapse. By bringing about a number of operational improvements, the project helped prevent that from happening.

**Table 1. Restoration of Tashkent SWM I: Waste Collection Indicators**

	Baseline (1998)	Target (2002)	Achievement (2007)
Waste collected (million tonnes p.a.)	1.4	1.5	1.2
Collection bins	0	21,500	19,250
Secure collection points	0	na	395
Collection vehicles (number)	398	475	444

*Sources: PAD, ICR and PPAR mission*

5.2 Project results on the collection side of SWM are reported in Table 1. First, was the large scale introduction of steel collection bins of various sizes for temporary storage at collection points. The IEG mission saw them in good condition and in intensive use. This was particularly evident at locations of the second project innovation of “secure” collection points, paved and walled patios with on-site caretakers in residential areas to which residents of local apartment buildings would bring their trash. IEG inspected several of them—some independently of Makhsustrans—finding them all well managed, clean and with regular pickups by the operator. In later comments, however, the Region clarified that the project did not include the construction of the secure collection points, only the provision of equipment to them. But the IEG mission also saw several unguarded collection sites (with piles of uncollected garbage) in different parts of the city. These still out-number the secure collection points by two to one in Tashkent. Despite the progress thus far, many more secure collection points are still needed. The third improvement came through the international procurement of 270 new vehicles in

2001. They renewed more than half the existing fleet rather than actually expand it (Table 1), but the new transfer stations (see below) meant that a smaller fleet could be used more efficiently since fewer collection vehicles had to go a distant landfill. Makhstrans' green trucks plying the streets throughout Tashkent appear well-maintained. The operator reports that 75 percent are in use at any one time, thanks to the repair depot provided by the project. During its visit to depot the IEG mission could see the highly professional maintenance work carried out there, but also the depletion of the generous stock of spare parts that had been provided by the project. Following all these improvements to solid waste collection in Tashkent, the findings of project surveys among final users point to a greater user satisfaction with the service today than prior to the project.

**Table 2. Restoration of Tashkent SWM II: Waste Disposal Indicators**

	Baseline (1998)	Target (2002)	Achievement (2006)
Transfer stations (number)	0	4	3
Transfer vehicles (number)	0	36	32
Disposal site 1. Ahangaran Road	Dumpsite	Sanitary landfill	Controlled landfill
Disposal site 2. Zangiata	Dumpsite	Closed and covered	Continuing Dumpsite
Disposal site 3. Hasanbay	Dumpsite	Closed and covered	Closed and covered

*Source: PAD, ICR and PPAR mission*

5.3 SWM disposal results arising from the project are summarized in Table 2. First, the project introduced transfer stations to Tashkent for the first time. During implementation, it was found that three transfer stations provided sufficient capacity, instead of the four planned. During a site visit to one of them, the IEG mission found intense delivery, weighing, compacting and removal operations going smoothly. Importantly, the weighbridges directly fed operational information to computer systems on site. Second, a small fleet of transfer trucks, Tashkent's first, transported cylindrical containers containing compacted waste to the distant landfill. Economies of scale and efficiency gains of a transfer operation come from a large ratio between capacities of the transfer trucks and the collection trucks—but this was just 10 tonnes to 6 tonnes respectively under this project, according to figures given to IEG during a transfer station visit in Tashkent. In later comments, however, the Region stated that each transfer station truck had a capacity of 18.5 tonnes. Thirdly, the project had designs on all three of Tashkent's solid waste disposal sites, but with mixed results. The Ahangaran Road site, located some 30 kms south east of the city, was upgraded to a controlled landfill operation, but not fully to the sanitary landfill, with leachate and methane gas collection and treatment, as intended. There were no evident signs of problems—no smell of gas, spontaneous combustion, or visible leachate seepage—in the arid environment of the site. But IEG learned that there had been an explosion there—indicating methane gas accumulation—ten years before. During its site visit, IEG witnessed waste being weighed upon arrival, discharged by the transfer trucks in a predetermined cell and rapidly

covered by soil—something not during winter months when the ground is frozen. Waste picking continues at the site, but on a very small scale—35 people according to the Region principally to recover plastic products. The project’s intended separate handling of bio-medical waste was not implemented, so presumably this kind of waste continues to be disposed together with regular garbage. IEG visited the environmentally hazardous Zangiata site, to the southwest of Tashkent that was still in use, and not closed as the project appropriately intended. As mentioned earlier, the failure to close arose from a mistaken belief at appraisal that the Zangiata site was within the jurisdiction of the Tashkent Municipality, and that the Municipality had the authority to close it. That was not the case. After it was later found to be located outside the Tashkent Municipality an August 2004 amendment to the project’s legal agreement cancelled the covenant requiring the closure of this site. On the other hand, the older Hasanbay site also visited by IEG, just 12 kms from central Tashkent, is now fully closed and covered as agreed, but the site still has to be brought back into some worthwhile alternative use.

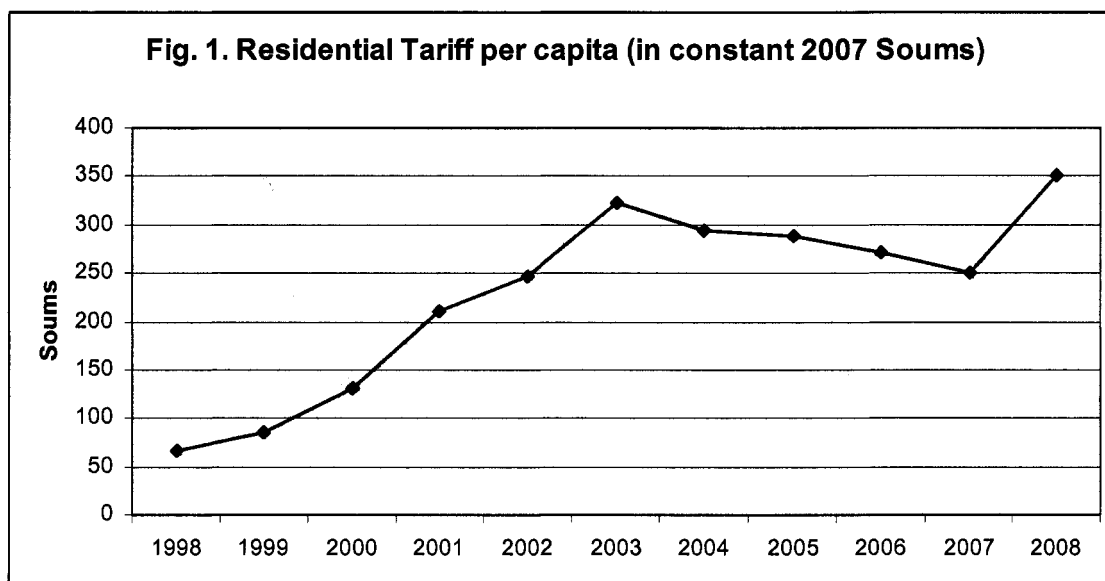
### IMPROVING THE BASIS FOR CONTINUING TASHKENT’S SWM OPERATIONS

5.4 **Modest Efficacy:** The project contributed most to the *technical* foundation, and less to *financial* and *institutional* aspects for future operation. Each one is considered in brief and separately here.

*Technical:* Through introducing key elements of a working SWM system—particularly secure collection points, collection and transfer vehicles, transfer stations—the project helped improve the technical basis for future SWM operations. Exposing the operator Makhsustrans and Tashkent Municipality to this kind of operation for the first time prepared them for taking it into the future. The project enabled them through on-the-job experience to build up their technical knowledge of many aspects of a modern SWM system. Particularly through monitoring the day-to-day performance of the SWM system, the project also left Makhsustrans with reliable operations and management information systems for the first time. Thanks to the project, the operator was able to build up an important skill base for the highly skilled maintenance needed to keep such a large operation under way. As noted before, a more solid foundation was laid on the collection than on the disposal side of the operation.

*Financial:* Overall the project’s cost recovery results were only modest in introducing Tashkent to the idea that current financing had to be constant and at an adequate level to ensure the continued operation of its SWM system. Cost recovery performance was best during 1999-2003, a period that saw a significant real increase in the value of the residential tariff (Fig. 1). It was weakest during 2003-2007, a period without tariff adjustments depriving the system of needed cash and also leaving the project in non-compliance with one of the main loan conditions requiring annual adjustments (PAD p.12). Local officials in Tashkent told the IEG mission that Makhsustrans had received generous support and subsidies from the Municipality especially in the form of donations of equipment. But the operator was in need of a stronger cash flow, not more equipment that it had no revenues to operate. Eventually, there was an “eleventh hour” hope of recovery of current revenue, following a tariff increase in February 2008. Had this latest change not occurred, efficacy would have been rated as negligible. Makhsustrans had succeeded in lowering operating costs and collecting tariffs more aggressively, but these

efforts alone were not enough to prevent the erosion of profitability while tariffs remained unchanged (Table C. 3). As part of its assessment of the SWM system financial performance, the IEG mission discussed with local authorities in Tashkent the risk to the future operation of the SWM system of the failure to adjust tariffs or raise alternative revenues to fund it. Some four months after the IEG mission, the solid waste tariff was raised by 40 percent reaching the highest level, in real terms, in all its history (Fig. 1)—an important if belated step to help restore SWM’s financial foundation as well as compliance with project legal covenants (PA Schedule 1). According to later comments by the Region on this PPAR, the WB project team had numerous discussions about the failure to raise the tariffs. But IEG found that these were not translated into prominent conclusions or recommendations in supervision mission Aide Memoires. Since 2004 they have always highlighted good project progress in the main text, while consigning mention of the cost recovery issue to a brief note in an annex, with the assurance that the WB mission had been assured that the (unadjusted) tariff level was sufficient. During its own mission in Tashkent, IEG found few interlocutors well-informed about the financial crisis facing the SWM operation that arose from the failure to adjust tariffs or how to solve it.



*Institutional:* Project results were only modest in reforming SWM in Tashkent, starting with the failure to establish a self-financing system (that could eventually be privatized, even if immediate privatization was EBRD’s aim only). An excellent tariff study was completed under the project. Some important recommendations, notably the unitary tariff structure throughout the city, were adopted, but methods for assessing necessary tariff levels for (operating and maintenance) cost recovery were not used by the local authorities. In hindsight, agreement on these policies would have been better achieved *before* project start-up. IEG could see that Makhsustrans’ still needs to modernize its accounting and financial management systems, as auditors had earlier noted. On the positive side, the project ICB experience to procure a large number of SWM vehicles had a lasting demonstration effect. It convinced local authorities that this was the best and most economical method for investing in their system.

## EFFICIENCY

5.5 Although the ICR reported an internal rate of return for the project of 11.6 percent, the Region was unable to provide the worksheets and data used for this estimate. For that reason, IEG made its own estimate based upon actual costs and simplified simulations of the likely benefits (Table 3, with details in Annex B). Using the willingness to pay results of the project’s tariff study that corresponds to a real tariff revenue approximately twice the maximum achieved prior to this year’s adjustment (in 2003), IEG estimates a 14.2 percent economic rate of return (ERR) for the project, somewhat higher than reported by the PAD or ICR. On the other hand, weak SWM system financial flows, even taking into account the 40 percent tariff increase in February 2008, yield no financial rate of return (FRR) at all—hardly surprising for a loss-making operation, where total net financial benefits are only US\$9.6 million, against a cost of US\$43.2 million (all in current prices).

**Table 3. Tashkent SWM Project: Estimated Internal Rates of Return**

	Appraisal (PAD)	Completion (ICR)	IEG ((PPAR)
Economic Rate of Return – ERR	13.2%	11.6%	14.2%
Financial Rate of Return – FRR	3.0%	(not estimated)	None

*Key assumptions: 10 yr useful life (PAD/ICR); 12 yr useful life (PPAR); ERR benefit streams from willingness to pay for health and other externalities derived from project tariff study; FRR benefit streams from projected (PAD) and actual/projected (PPAR) financial results; ERR/FRR costs include project investments plus operating expenditures.*

*Sources: PAD, ICR and IEG simulation.*

## SUBSIDIES

5.6 Even with the recent tariff increase, it is likely that Tashkent’s SWM system, like those in many cities in other countries, will not reach financial sustainability to the point of paying off capital investments too. For that reason, subsidies by the Municipality and/or higher levels of government will continue to be necessary to ensure the continuing operation of the system. Already, the Municipality provides a significant subsidy amounting to approximately US\$4.7 million annually through amortizing the WB/EBRD loans that are not charged to Makhsustrans. As an alternative or complement to further tariff adjustments, the Municipality could consider making direct budget support to Makhsustrans. If the Municipality were to decide to subsidize the city’s SWM in an amount equivalent to one percent of its total revenues, it could still offer US\$1.9 million budget support to Makhsustrans per annum, *after* paying off the external loans for the project (Table C.4)

## 6. Broader Issues Arising from this Evaluation

### SUSTAINING EVERYDAY FUNDING: A MUST FOR ANY OPERATION

6.1 Assuring ongoing finance through the medium-term for operations and maintenance (O&M) is essential for the cost recovery of any service-providing project to



continue to yield benefits throughout its useful life. Beyond that, more finance still is needed for investment in replacement equipment if an operation is to continue into the longer term after the useful life of existing equipment has expired. Apart from the funding itself, it is also important for all project stakeholders to understand the importance of sound financial management and for executing agencies to carry it out effectively. Without adequate finance and solid financial management, technical solutions, however brilliant and innovative cannot be put to the test and sustained. In the case of the Tashkent SWM, for example, improvements in technical operations of collection and disposal, strengthening environmental controls and public participation will all come to naught unless funding is made available to sustain an operation on a day-to-day basis. Indeed proper financing is not an end in itself, but a means toward realizing the intended economic and social impacts of an operation. As a bank, the WB can and always should bring considerable financial know-how to the technical operations it supports. Such hands-on assistance to borrowers and implementation agencies given as-needed can be particularly valuable in transition economies such as Uzbekistan's, where public sector entities understandably have had little experience of financial management as autonomous agencies.

#### **TO ATTRACT PRIVATE SECTOR PARTICIPATION OPERATIONS MUST BE PROFITABLE**

6.2 Inadequate revenues stunt private sector operations in SWM as in any other sector or line of business. An international tender in 2003 for the private operation of Makhsustrans' Chilanzar and Shaihantaur districts of Tashkent failed to yield any bids at all for this reason (ICR p. 42). It led several local officials to ask whether SWM can ever be profitable enough in Tashkent for market mechanisms to work properly there. Another more detailed way of asking the same question is to inquire about the level of subsidies necessary to make an operation profitable. Even without subsidies, some parts of the operation can appear profitable at times. In 2005, for instance, collection services of Sergeli, one of the eleven districts ("rayon") in Tashkent, were contracted out to the former Makhsustrans manager of that district who had set up his own private firm *Fayzlitrans* specifically to run the franchise. For its revenue, the firm collected tariff payments from beneficiaries that (initially) more than offset its main cost of monthly rent of 32 Makhsustrans vehicles. With the same tariff as the rest of the city, the new company collected its revenues with more rigor and lowered costs by laying off staff and consolidated collection routes. It reported a first year profit in 2005 of 18 percent of revenues in 2005, falling to just 5 percent in 2007, as a result of the frozen tariff discussed earlier in this report. The recent tariff hike should inject new life-blood into a private operation, but only if the regulatory authorities responsible adopt a policy that continues to set tariffs high enough—with or without subsidies—to allow profitability.

#### **EX-POST EVALUATION OF OPERATIONS WITH PARALLEL FINANCING**

6.3 Before the WB loan was closed, EBRD's Evaluation Department had proposed conducting a joint evaluation with IEG. This can be rewarding but challenging to do within a results-based framework, with EBRD's privatization objective not shared by the WB. In such cases, ex-post evaluation is more straightforward if done separately from the perspective of each donor's objectives. Identical outcomes might thus be assessed differently from the perspective of each donor's objective. With its explicit aim of

privatizing the SWM operation, EBRD found the lack of progress toward privatization, for instance, to be an unsatisfactory outcome, one that was ‘not accomplished’. The WB, on the other hand, without an explicit privatization objective for the short term, would not fault project performance on these grounds. Different time frames of involvement also conspire against joint evaluation. Nevertheless a joint evaluation of Tashkent SWM project may have helped each bank to learn more from the other, better understand their different perspectives and how they were resolved. That said, conditions for joint evaluation are most straightforward under a *co-financing* arrangement where all donors sign up to the same aim and agree to pursue the same goal, especially at the same time.

**Table 4: Summary of EBRD Internal Evaluation of Tashkent SWM Project**

OVERALL ASSESSMENT	Significant positive development impacts, but without a tariff increase* financial sustainability remains an issue	**Rating: Partly successful
<b>Lessons Learned:</b>		
<ul style="list-style-type: none"> <li>○ Restructuring public utilities will usually involve tough tariff decisions. Without the necessary tariff adjustments, the utility will remain loss-making and therefore will not be an attractive privatization target.</li> <li>○ In a difficult investment environment, local privatization—involving a local entrepreneur establishing his own business to run the collection service in one particular area—may be a good first step.</li> <li>○ Project objectives—such as those about international privatization in this case—should be achievable in the life of the project.</li> <li>○ Project implementation duration needs to be realistic.</li> <li>○ Project monitoring of public sector projects requires a more structured approach, particularly when there are multiple stakeholders.</li> <li>○ Maintain flexibility in funding decisions, sustaining funding levels in the face of cost saving, for instance, by expanding procurement packages.</li> <li>○ Joint evaluation may prove difficult to coordinate, especially when timing and procedures are different between the parties.</li> <li>○ A project’s financial demands upon the client should be realistic.</li> <li>○ Don’t change a winning team when the relationship between the client and (project management) consultant is good.</li> <li>○ Ensure that sufficient funds are ready for possible project extensions when it is likely that a loan agreement will be extended.</li> </ul>		

Source: EBRD

Notes: \* reported in mid-2007 before the February 2008 increase of 40%.

\*\* rating scale: Highly Successful, Successful, Partly Successful, Unsuccessful

## 7. Ratings

### OUTCOME

7.1 The overall outcome of the project is rated *moderately satisfactory*, since there were some shortcomings in achieving the first *recovery* objective, and moderate shortcomings in achieving the second *sustainability* objective. An *Unsatisfactory* outcome rating would have been warranted had there not been the February 2008 tariff adjustment that prevented the financial collapse of the SWM system. Efficacy is rated *modest* overall, being *substantial* for recovery, while *modest* for building the foundation for a sustainable operation. Efficiency is rated *modest* overall, being *substantial* for economic efficiency, while *negligible* for financial efficiency as indicated by the respective internal rates of return.

## **RISK TO DEVELOPMENT OUTCOME**

7.2 Currently this risk is rated *significant*. Although tariffs have recently been adjusted, further adjustments will be needed in the future to assure ongoing funding of the SWM operation and reinvestment. For a four-year period between 2003 and 2007, Tashkent's SWM system was seriously under-funded, without even an inflation adjustment of the tariff. In this regard, the appraisal's words of 1998 are relevant today: "Project sustainability is principally dependent on the establishment and maintenance of a stable financial and institutional structure for the operation of the SWM system. In the absence of these, the project investment simply delays rather than prevents the anticipated collapse of the system." (PAD p. 10).

## **(WORLD) BANK PERFORMANCE**

7.3 Rated *moderately unsatisfactory*, because of a flawed project design and insufficient appraisal and supervision of the financial and cost recovery challenges facing the project. The weak design arose mainly from a poor conception of the WB/EBRD partnership, with each bank having a different aim toward privatization in particular. While the EBRD was contemplating withdrawal from the project, the WB went ahead signing a LA for an (incomplete) part of an operation. Project design was also undermined by the appraisal's failure to realize that the environmentally risky Zangiata dumpsite was located outside the jurisdiction of the Tashkent municipal authorities, who could not close it as the project required. Especially after 2004, Bank supervision could have provided more hand-on support and advice to the borrower on the financial challenges facing SWM. With tariffs frozen, the project was in non-compliance with loan conditions, but supervision aide memoires continued to report satisfactory project progress in their main text. Cost recovery was reported briefly in an annex where one could read that "the mission was informed that the current SWM tariff are sufficient for Spetstrans to adequately cover its O&M" (November 2005 supervision mission aide memoire, Annex 4). Instead, the WB could have done its own analysis, alerted the local authorities to the scale impending SWM financial crisis, and provide useful hands-on advice to help solve it during every mission. Officials in Tashkent told IEG that they felt that there was no champion for cost recovery on the WB side of this project, something that IEG endorses from the tenor of the documentation just cited. In later comments on the PPAR, the Region felt that fielding a separate mission in 2004 for financial analysis was an appropriate response. Of course, the WB was throughout implementation constrained by the project's agreed division of labor—technical for WB, and institutional/financial for EBRD—itself a product of the weak project design.

## **BORROWER PERFORMANCE**

7.4 Rated *moderately satisfactory*, principally for the effective implementation of most aspects of the project until 2003, and thereafter primarily of the technical side. Insufficient attention to the operation's financial and institutional needs during 2003-2007, ended by an eleventh hour tariff adjustment in 2008. This response, albeit belated, brought financial respite to Makhsustrans and does demonstrate awareness in Tashkent of the importance of cost recovery, and of the need to bolster Makhsustrans as an effective and efficient operator of this capital city's large and vital SWM system.

## **8. Findings and Lessons**

8.1 Parallel funded operations in which all donors do not share a key objective (privatization in this case) should generally be avoided and preference given to a single donor approach. If operations with divergent aims cannot be avoided, then the project design should ensure each donor has control over the components that are instrumental to the achievement of its own particular objectives.

8.2 Careful assessments of users' willingness and ability to pay, borrower agencies' institutional and financial performance, the financial impact of a project upon users and providers should always be part of the appraisal of projects that incur significant operating costs over the medium to long term. In the case of the Tashkent SWM project, only the first, willingness-to-pay, aspect was adequately covered.

8.3 Cost recovery and project financial performance should be monitored thoroughly during supervision. The WB should bring problems—such as financial shortfalls—that imperil project achievements immediately to the attention of a borrower, continually offering high quality hands-on technical advice on solutions as needed. If current revenues are insufficient and repeated requests for strengthening them ignored, then the WB should seek remedies under the legal agreements such as suspension of disbursements and/or cancellation of a project.

## Annex A. Basic Data Sheet

### UZBEKISTAN: TASHKENT SOLID WASTE MANAGEMENT PROJECT (LN 4326 UZ)

#### Key Project Data *(amounts in US\$ million)*

	<b>Appraisal estimate</b>	<b>Actual or current estimate</b>	<b>Actual as % of appraisal estimate</b>
Total project costs	56.0	43.2	77.1%
Loan amount	24.0	21.4	89.2%
Parallel financing (EBRD)	21.3	11.5	54.0%
Cancellation	0.0	2.6	-

#### Cumulative Estimated and Actual Disbursements

	<b>FY99</b>	<b>FY00</b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>	<b>FY05</b>	<b>FY06</b>	<b>FY07</b>
Appraisal estimate (US\$ million)	2.9	9.6	16.8	22.8	24.0	24.0	24.0	24.0	24.0
Actual (US\$ million)	0.0	0.0	6.5	10.1	12.3	14.3	15.0	20.9	21.4
Actual as % of appraisal	0%	0%	39%	44%	51%	59%	63%	87%	89%

Date of final disbursement: August 4, 2006

#### Project Dates

	<b>Original</b>	<b>Actual</b>
Project Concept Note	04/17/1997	04/17/1997
Appraisal	10/28/1997	01/13/1998
Board approval	05/21/1998	05/21/1998
Signing	11/16/1998	11/16/1998
Effectiveness	06/30/1998	05/13/1999
Closing date	12/31/2003	06/30/2006

**Staff Inputs** (staff weeks)

<b>Stage of Project Cycle</b>	<b>Staff Time and Cost (WB Budget Only)</b>	
	<b>No. of staff weeks</b>	<b>USD Thousands (including travel and consultant costs)</b>
Lending	*76	316.2
Supervision/ICR	172	819.3
Total	248	1,135.5

\* Data not available. This estimate pro-rated from supervision/ICR figures

**Mission Data**

	<b>Date (month/year)</b>	<b>No. of persons</b>	<b>Staff days in field</b>	<b>Specializations represented</b>	<b>Performance rating</b>	<b>Rating trend</b>	<b>Types of problems</b>
Identification/ Preparation		6		TTL, Eng, Fin, Soc, Env LC			
Appraisal		6		TTL, Eng, Fin, Soc, Env LC			
Supervision	12/1998	3		TTL, Soc, LC	S		-
	07/1999	3		TTL, Env, Eng, LC	S		-
	12/1999	4		TTL, E-TTL, Proc, LC	S		-
	07/2000	4		TTL, Eng, Soc, Fin, LC	S		-
	03/2001	4		TTL, LC	S		-
	09/2001	6		TTL, Eng, Soc, Fin, Env, LC	S		-
	05/2002	3		TTL, LC	S		-
	09/2002	3		TTL, LC	S		-
	06/2003	5		TTL, Fin, Soc, Fin, LC	S		-
	05/2004	4		TTL, Fin, LC	S		-
	11/2004	3		TTL, LC	S		-
Completion	01/2006	3		TTL, Econ, LC	S		-

TTL-task team leader; Eng-engineer, Fin-financial specialist; Soc-social scientist; Env-environmental specialist; Econ-economist; E-TTL-EBRD task team leader.

## Annex B. IEG Simulations of ERR and FRR Estimates

**Table B1. Tashkent SWM Project: IEG Simulations of Internal Rates of Return**

<b>ERR: 14.2%</b>	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<i>(in millions of US dollars)</i>													
Willingness to pay			13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
- Operating costs			6.6	6.3	5.9	5.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0
= Benefit			-0.4	0.1	0.2	0.2	-0.1	0.6	0.6	0.6	0.6	0.6	0.6
- Project investment	13.1	7.2	4.5	4.1	1.4	12.0	1.1	-	-	-	-	-	-
<b>= Net Benefits</b>	<b>-13.1</b>	<b>-7.2</b>	<b>2.6</b>	<b>3.4</b>	<b>6.5</b>	<b>-4.1</b>	<b>5.8</b>	<b>6.2</b>	<b>6.2</b>	<b>6.2</b>	<b>6.2</b>	<b>6.2</b>	<b>6.2</b>
<b>FRR: none</b>	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<i>(in millions of US dollars)</i>													
Operating income			6.2	6.4	6.1	6.1	6.9	7.6	7.6	7.6	7.6	7.6	7.6
- Operating costs			6.6	6.3	5.9	5.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0
= Net income			-0.4	0.1	0.2	0.2	-0.1	0.6	0.6	0.6	0.6	0.6	0.6
- Project investment	13.1	7.2	4.5	4.1	1.4	12.0	1.1	-	-	-	-	-	-
<b>= Net Benefits</b>	<b>-13.1</b>	<b>-7.2</b>	<b>-4.9</b>	<b>-4.0</b>	<b>-1.2</b>	<b>-11.8</b>	<b>-1.1</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>

Sources: ICR and IEG re-estimate

Notes: All 2001-2007 operating income and cost data from Makhsustrans accounts, and project investment data prorated as per actual disbursement of WB loan. 2a. uses ICR assumptions (ICR p. 30) of: (i) 10 year project life (but extended here to 13 years to take account of project implementation delays); (ii) 10% increase of operating income in 2007, and constant thereafter; (iii) operating costs constant from 2008. 2b. assumptions are the same, except that they indicate the theoretical levels of operating income (in bold underlined font) that would be necessary to generate the 11.6% ERR reported in the ICR, and taxes are assumed to be 10% of net income from 2008. For ERR, benefits are based upon project estimates of willingness to pay. Willingness to pay assessments may not always be accurate. Some respondents may understate the amount they are willing to pay in order to hide their income levels from possible tax assessments. Others may overstate what they are willing to pay in the belief that they will never actually have to pay anything. There is no evidence that these biases cancel out. For FRR, benefits are estimated upon actual revenues during 2003-2007 and projected revenues thereafter that incorporate the February 2008 tariff adjustment.

## Annex C. Financial Data of Makhsustrans and Tashkent Municipality

**Table C1. Makhsustrans Financial Results 1998-2007 (in millions of Soum - current prices)**

	1998	1999	2000	2001	2002	2003	2004	2005	2006	* 2007
Operational earnings	1104	1555	1771	2708	3832	6187	6367	6050	6104	3468
Operational costs	950	1458	1279	1709	3210	6605	6266	5879	5915	3515
Operating margin/Net income	154	97	492	999	622	-418	101	171	189	-47
Finance charges (incl. debt service)	-	-	-	-	-	-	-	117	229	166
Taxes	na	Na	na	na	na	126	102	109	74	19
Profit (+) /loss (-)	154	97	492	999	622	-544	-1	62	115	-66

Sources: PAD and Makhsustrans. Note: \* half year only for 2007

**Table C.2. Makhsustrans Financial Results 1998-2007 (in millions of Soum – constant prices of 2007)**

	1998	1999	2000	2001	2002	2003	2004	2005	2006	* 2007
Operational earnings	4815	5257	4638	5673	6312	8005	7475	6984	6617	3468
Operational costs	4143	4929	3349	3580	5287	8546	7357	6787	6412	3515
Operating margin/Net income	672	328	1288	2093	1024	-541	119	197	205	-47
Finance charges (incl. debt service)	-	-	-	-	-	-	-	117	229	166
Taxes	na	na	na	na	na	163	120	126	80	19
Profit (+) /loss (-)	672	328	1288	2093	1024	-704	-1	72	125	-66

Sources: PAD and Makhsustrans. Note: \* half year only for 2007

CPI growth per annum	29.0%	29.1%	25.0%	27.2%	27.3%	10.2%	1.7%	6.5%	8.4%	15.0%
CPI index 1998 = 100	100	129.0	166.5	208.2	264.8	337.1	371.5	377.8	402.3	436.1
conversion factor:	4.4	3.4	2.6	2.1	1.6	1.3	1.2	1.2	1.1	1.0



**Table C.3. Makhsustrans Financial Results 1998-2007 (in millions of US dollars –current prices)**

	1998	1999	2000	2001	2002	2003	2004	2005	2006	* 2007
Operational earnings	11.7	12.5	7.5	6.4	5.0	6.4	5.7	5.4	5.0	2.7
Operational costs	10.1	11.7	5.4	4.0	4.2	6.8	5.6	5.2	4.9	2.8
Operating margin/Net income	1.6	0.8	2.1	2.4	0.8	-0.4	0.1	0.1	0.2	0.0
Finance charges (incl. debt service)	-	-	-	-	-	-	-	0.1	0.2	0.1
Taxes	na	na	na	na	na	0.1	0.1	0.1	0.1	-
Profit (+) /loss (-)	1.6	0.8	2.1	2.4	0.8	-0.6	0.0	0.5	0.1	-0.1

*Soum:US\$ exchange rate*      94.5    124.6    236.3    422.6    771.5    971.3    1119.2    1129.9    1218.9    1266.3

**Table C.4 Tashkent Municipality: Revenues and Expenditures 2003-2007 (in millions of Soum - current prices)**

	2003	2004	2005	2006	*2007
Total Revenues	459,471	532,106	632,425	747,920	836,222
- of which, Own Revenues	166,519	216,092	226,442	280,976	287,340
Own: Total Revenues (%)	36%	41%	36%	38%	34%
Own budget expenditures	163,047	214,500	224,842	275,301	287,340
Own budget surplus(+)/deficit(-)	3,472	1,592	1,600	5,675	-

*Source: Tashkent Municipality Finance Department Note: \* 2007 projection*

